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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			EXAMINER WANG, QUAN ZHEN	
			ART UNIT 2613	PAPER NUMBER
			NOTIFICATION DATE 10/19/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/691,760

Applicant(s)

GROT ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to:
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, and 7-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ostlund (U.S. Patent US 5,699,178) in view of Vujkovic-Cvijin et al. (U.S. Patent Application Publication US 2003/0039015 A1).

Regarding claims 1, 9, 13, and 18, Ostlund discloses an optical communication network (fig. 6) in which interoperable optical frequencies are defined without an absolute frequency reference, the network comprising: means for distributing a non-absolute frequency reference to nodes of the network (abstract; column 2, lines 26-31; column 4, lines 17-22). Ostlund differs from the claimed invention in that lida does not specifically disclose that a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference. However, a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference is well known in the art. For example, Vujkovic-Cvijin discloses a tunable multi-channel device (figs. 2-3) generating

channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with a frequency reference (fig. 4, reference 404. Please note that Vujkovic-Cvijin provides “an anchor for a uniform spacing output grid”, which is not necessarily ITU grid. ITU grid is simply one special example.), Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference, as it is disclosed by Vujkovic-Cvijin, in the multi-channel system of Ostlund in order to reconfigure the frequencies of the channels.

Regarding claim 2, and claim 14, lida further discloses exchanging optical information signals between two or more of the nodes at a frequency aligned with another of the channels of the tunable multi-channel device (column 1, lines 8-25).

Regarding claim 3, Ostlund further discloses the channels of the multi-channel device provided to at least some of the nodes differ in absolute frequency prior to the tuning, since at the time of Ostlund’s invention, the ITU wavelengths, or “absolute frequency”, have not been introduced.

Regarding claims 4-5 and 19-20, the frequency of a channel from a transmitter of Ostlund inherently tuned to match the frequency of the corresponding channel in a receiver in order for the receiver to properly receive transmitted information (column 1, lines 8-25).

Regarding claim 7, Vujkovic-Cvijin further discloses providing to the nodes non-absolute frequency reference artifacts defining an identical frequency (fig. 2, reference gas).

Regarding claims 8 and 10, Ostlund further disclose broadcasting a non-absolute frequency reference signal to the nodes (column 2, lines 26-31).

Regarding claims 11 and 12, Vujkovic-Cvijin further discloses locating the tunable multi-channel device at one of the nodes (fig. 2-5); the channels of all the tunable multi-channel devices having fixed channel spacing (fig. 4); distributing the non-absolute frequency reference to each of the nodes and at each of the nodes, frequency aligning one of the channels of the multi-channel device thereat with the non-absolute frequency reference (fig. 4, reference 404; Please note that Vujkovic-Cvijin provides "an anchor for a uniform spacing output grid", which is not necessarily ITU grid. ITU grid is simply one special example.).

Regarding claim 15, and claim 16, Vujkovic-Cvijin further discloses a light source; and a channel selector operable to align the light source in frequency with the other of the channels of the multi-channel device (figs. 2-3).

Regarding claim 17, Vujkovic-Cvijin further discloses the multi-channel device comprises a Fabry-Perot etalon (fig. 5, etalon 512) comprising a cavity, the cavity having a length; and each of the nodes comprises a control circuit operable to tune the etalon by adjusting length of the cavity of the etalon in response to a feedback signal indicative of a frequency difference between a resonance node of the etalon and the non-absolute frequency reference (fig. 5; paragraph 0054-0064).

Regarding claim 21, Vujkovic-Cvijin further discloses each of the nodes additionally comprises a channel selector (fig. 5, 530) operable to frequency align the one or more frequencies at which the transceiver is operable to transmit and/or receive the optical information signals with respective ones of the channels of the tunable multi-channel device thereat (paragraph 0054-0064).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iida et al. (U.S. Patent Application Publication US 2002/0075539 A1) discloses sending a non-absolute reference frequency to nodes in an optical network (paragraph 0212).

Response to Arguments

4. Applicant's arguments filed on August 14, 2007 have been fully considered but they are not persuasive.

Applicant argues that Ostlund (the '178 reference) "is indeed directed to using an absolute wavelength reference". Examiner respectfully disagrees.

In supporting the argument, Applicant states, "The '178 patent explicitly refers to doing this in a way that enables "absolute wavelength control" to be achieved. (See Column 2, lines 21 - 25)." However, "**absolute wavelength reference**" and "**absolute wavelength control**" are **two completely difference things**. These two different

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concepts should not be mixed and are not interchangeable. The complete statement in column 2, lines 161-25 reads, "The present invention solves these problems by using a superimposed modulation signal on the sweeping wavelength reference light. Using that, a relationship between the modulation signal in the reference wavelength signal and the wavelength of the reference wavelength signal is established. This means that **no extra synchronization signal needs to be transmitted**, and that an **absolute wavelength control can be achieved without the need for using the start and stop wavelengths of the reference source in the nodes.**" As it can be seen what Ostlund teaches is to achieve "an absolute wavelength control" using the "wavelength reference" distributed in an optical multichannel network. **No where does Ostlund teaches that the wavelength reference is an absolute wavelength reference.** Furthermore, even if the wavelength reference of Ostlund were an absolute wavelength reference, the method disclosed by Ostlund can obviously be used to distribute any wavelength reference, regardless whether it is absolute or non-absolute.

In deed, Ostlund teaches a "procedure and device for distribution and reception of a wavelength reference in optical multichannel networks", as it is clearly, specifically, and explicitly reflected by the title of the patent. Ostlund only differs from the claimed invention in that Ostlund does not specifically disclose that a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference. However, a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to

frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference is well known in the art. For example, Vujkovic-Cvijin discloses a tunable multi-channel device (figs. 2-3) generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with a frequency reference. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a tunable multi-channel device generating channels with equal channel spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference, as it is disclosed by Vujkovic-Cvijin, in the multi-channel system of Ostlund in order to reconfigure the frequencies of the channels.

Applicant further argues that Vujkovic-Cvijin ('015 reference) "is directed to tuning multiple lasers of a dense WDM (DWDM) system to an absolute frequency". However, in accordance with Applicant's definition, an "absolute frequency" refers to a frequency that is on the ITU frequency grid, and a "non-absolute frequency" refers to a frequency that is not on the ITU frequency grid (see the second paragraph on page 10 of the instant Remarks). Any one of ordinary skill in the art understands that the ITU frequency grid is a set of frequencies used for standardizing elements and components used in optical networks. The method of tuning a transmitter to transmit at a frequency on the ITU grid can be used to tuning a transmitter to a frequency reference that is not on the ITU grid. Therefore, the combination of Ostlund and Vujkovic-Cvijin clearly

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discloses each and every claimed limitations and the rejections of claims 1-5, and 7-21 still stand.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw

10/11/2007


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